

IN THE ABSTRACT

Please replace the abstract on page 17 with the following amended paragraph.

F9 A method for computing a natural logarithm function includes partitioning a mantissa region between 1 and 2 into N equally spaced sub-regions; precomputing ~~centerpoints~~ a, a reference point a_i of each of the N equally spaced sub-regions, where $i=0, \dots, N-1$; selecting N sufficiently large so that, within each sub-region, a first degree polynomial in m computes $\log(m)$ to within a preselected degree of accuracy for any m within the sub-region, where m is a mantissa of a binary floating point representation of a ~~number~~ variable x ; and computing a value of $\log(x)$ for a binary floating point representation of ~~a particular number~~ x stored in a memory of a computing device utilizing the first degree polynomial in m .